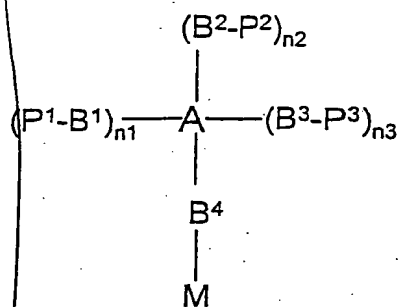


Claims

1. A compound comprising a repeating unit of formula (I)



I

in which:

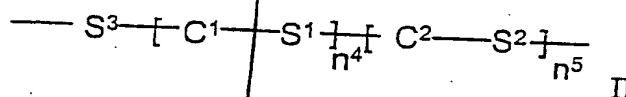
A represents a nitrogen atom, a carbon atom, a group $-CR^1-$ or an aromatic or alicyclic group, which is optionally substituted by a group selected from fluorine, chlorine, cyano and a C_{1-18} cyclic, straight-chain or branched alkyl group, which is optionally substituted by a single cyano group or by one or more halogen atoms and in which one or more non-adjacent alkyl $-CH_2-$ groups are optionally replaced by a group selected from $-O-$, $-CO-$, $-CO-O-$, $-O-CO-$, $-Si(CH_3)_2-O-Si(CH_3)_2-$, $-NR^1-$, $-NR^1-CO-$, $-CO-NR^1-$, $-NR^1-CO-O-$, $-O-CO-NR^1-$, $-NR^1-CO-NR^1-$, $-CH=CH-$, $-C\equiv C-$ and $-O-CO-O-$, wherein R^1 represents a hydrogen atom or lower alkyl,

M represents a repeating monomer unit;

n^1 to n^3 each independently represent 0 or an integer having a value of from 1 to 3, with the proviso that $1 < n^1 + n^2 + n^3 < 4$;

P^1, P^2, P^3 each independently represents a photoactive group; and

B¹ to B⁴ each independently represent a residue of general formula II



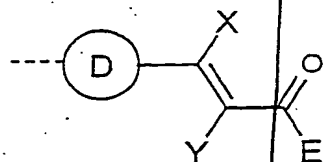
in which

5 S¹ to S³ each independently represent a single bond or a spacer group selected from a C₁₋₂₄ straight-chain or branched alkylene group, which is optionally substituted by a single cyano group or by one or more halogen atoms and in which one or more non-adjacent alkylene -CH₂- groups are optionally replaced by a group selected from -O-, -CO-, -CO-O-, -O-CO-,
10 -Si(CH₃)₂-O-Si(CH₃)₂-, -NR¹-, -NR¹-CO-, -CO-NR¹-,
-NR¹-CO-O-, -O-CO-NR¹-, -NR¹-CO-NR¹-, -CH=CH-, -C≡C- and -O-CO-O- wherein R¹ is as defined above,

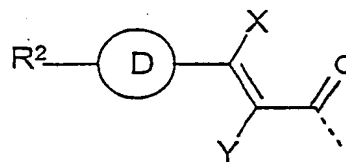
C¹ and C² each independently represents an aromatic or an alicyclic group, which is optionally substituted by a group selected from fluorine, chlorine, cyano or
15 a C₁₋₁₈ cyclic, straight-chain or branched alkyl group, which is optionally substituted by a single cyano group or by one or more halogen atoms and in which one or more non-adjacent alkyl -CH₂- groups are optionally replaced by a group selected from -O-, -CO-, -CO-O-, -O-CO-,
20 -Si(CH₃)₂-O-Si(CH₃)₂-, -NR¹-, -NR¹-CO-, -CO-NR¹-,
-NR¹-CO-O-, -O-CO-NR¹-, -NR¹-CO-NR¹-, -CH=CH-, -C≡C- and -O-CO-O- wherein R¹ represents a hydrogen atom or lower alkyl, and

n⁴ and n⁵ are each independently 0 or 1.

2. A compound according to Claim 1, in which P¹ to P³ are selected from the general
25 formulae IIIa and IIIb:



IIIa



IIIb

5 wherein the broken line indicates the point of linkage to S³ and wherein:

10 D represents pyrimidine-2,5-diyl, pyridine-2,5-diyl, 2,5-thiophenylene, 2,5-furanylene, 1,4- or 2,6-naphthylene; a phenylene group, which is optionally substituted by a group selected from fluorine, chlorine, cyano; or a C₁₋₁₈ cyclic, straight-chain or branched alkyl residue, which is optionally substituted by a single cyano group or by one or more halogen groups and in which one or more non-adjacent alkyl -CH₂- groups are optionally replaced by a group selected from -O-, -CO-, -CO-O-, -O-CO-, -Si(CH₃)₂-O-Si(CH₃)₂-, -NR¹-, -NR¹-CO-, -CO-NR¹-, -NR¹-CO-O-, -O-CO-NR¹-, -NR¹-CO-NR¹-, -CH=CH-, -C≡C- and -O-CO-O-, wherein R¹ is as defined above;

15 E represents -OR³, -NR⁴R⁵ or an oxygen atom, which defines together with the ring D a coumarin unit, wherein R³, R⁴ and R⁵ are selected from hydrogen and a C₁₋₁₈ cyclic, straight-chain or branched alkyl residue, which is optionally substituted by one or more halogen atoms and in which one or more non-adjacent alkyl -CH₂- groups are optionally replaced by a group selected from -O-, -CO-, -CO-O-, -O-CO- and -CH=CH-, or R⁴ and R⁵ together form a C₅₋₈ alicyclic ring;

20 X, Y each independently represent hydrogen, fluorine, chlorine, cyano or a C₁₋₁₂ alkyl group, which is optionally substituted by fluorine and in which one or

more non-adjacent alkyl $-\text{CH}_2-$ groups are optionally replaced by a group selected from $-\text{O}-$, $-\text{CO}-\text{O}-$, $-\text{O}-\text{CO}-$ and $-\text{CH}=\text{CH}-$;

R^2 represents hydrogen or a C_{1-18} straight-chain or branched alkyl residue, which is optionally substituted by a single cyano group or by one or more halogen atoms and in which one or more non-adjacent alkyl $-\text{CH}_2-$ groups are independently optionally replaced by a group selected from $-\text{O}-$, $-\text{CO}-$, $-\text{CO}-\text{O}-$, $-\text{O}-\text{CO}-$, $-\text{Si}(\text{CH}_3)_2-\text{O}-\text{Si}(\text{CH}_3)_2-$, $-\text{NR}^1-$, $-\text{NR}^1-\text{CO}-$, $-\text{CO}-\text{NR}^1-$, $-\text{NR}^1-\text{CO}-\text{O}-$, $-\text{O}-\text{CO}-\text{NR}^1-$, $-\text{NR}^1-\text{CO}-\text{NR}^1-$, $-\text{CH}=\text{CH}-$, $-\text{C}=\text{C}-$ and $-\text{O}-\text{CO}-\text{O}-$, wherein R^1 is as defined above.

3. A compound according to Claim 1 or Claim 2, in which the repeating unit of formula (I) comprises at least 50% of the monomer building blocks comprising the compound of formula (I).
4. A compound according to any one of claims 1 to 3, in which the group M is selected from acrylate; methacrylate; 2-chloroacrylate; 2-phenylacrylate; acrylamide; methacrylamide, 2-chloroacrylamide and 2-phenylacrylamide, the nitrogen atom of which is optionally substituted by a lower alkyl group; vinyl ether; vinyl ester; a styrene derivative; siloxane; imide; amic acid; amic acid esters; amidimide; maleic acid derivatives and fumaric acid derivatives.
5. A method of manufacturing a compound of formula (I) comprising the polymerisation of one or more pre-finished monomer units of formula (I).
6. A method of manufacturing a compound of formula (I) comprising reacting a photoactive derivative with a functional polymer analogue of a polymer according to Claim 1.
7. A polymer layer comprising a compound of formula (I) in cross-linked form.
8. A polymer layer according to Claim 7, which is an orientation layer for an optical or an electro-optical device.

9. Use of a compound according to any one of claims 1 to 4 in the manufacture of an optical or an electro-optical device.

Sub A3
5 10. An optical or an electro-optical device comprising a compound according to any one of claims 1 to 4.

11. An optical or an electro-optical device comprising a layer according to Claim 7 or Claim 8.

12. A compound of formula (I), which is Poly-[1-[11-[5-[4-[(E)-2-methoxycarbonylvinyl]benzoyloxy]-2-[6-[2-methoxy-(E)-4-(methoxycarbonylvinyl)phenoxy]oxyhexyl]benzoyloxy]undecyloxy]carbonyl]-1-methylethylene]

10 13. A compound of formula (I), which is Poly-[1-[11-[(E,E)-2,5-di-[6-[2-methoxy-4-(methoxycarbonylvinyl)phenoxy]oxyhexyl]benzoyloxy]undecyloxy]carbonyl]-1-methylethylene].